



**CIVIL GEOTECHNICAL SERVICES**  
**ABN 26 474 013 724**  
**PO Box 678 Croydon Vic 3136**  
**Telephone: 9723 0744 Facsimile: 9723 0799**

4<sup>th</sup> October 2017

Our Reference: 17529:NB034

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
CORNERSTONE – STAGE 6, WYNDHAM VALE**

Please find attached our Report Nos 17529/R001 to 17529/R007 which relate to the field density testing that was conducted at the filled medium density allotments of the above subdivision. The level 1 inspections and associated field density was conducted in late September 2017.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

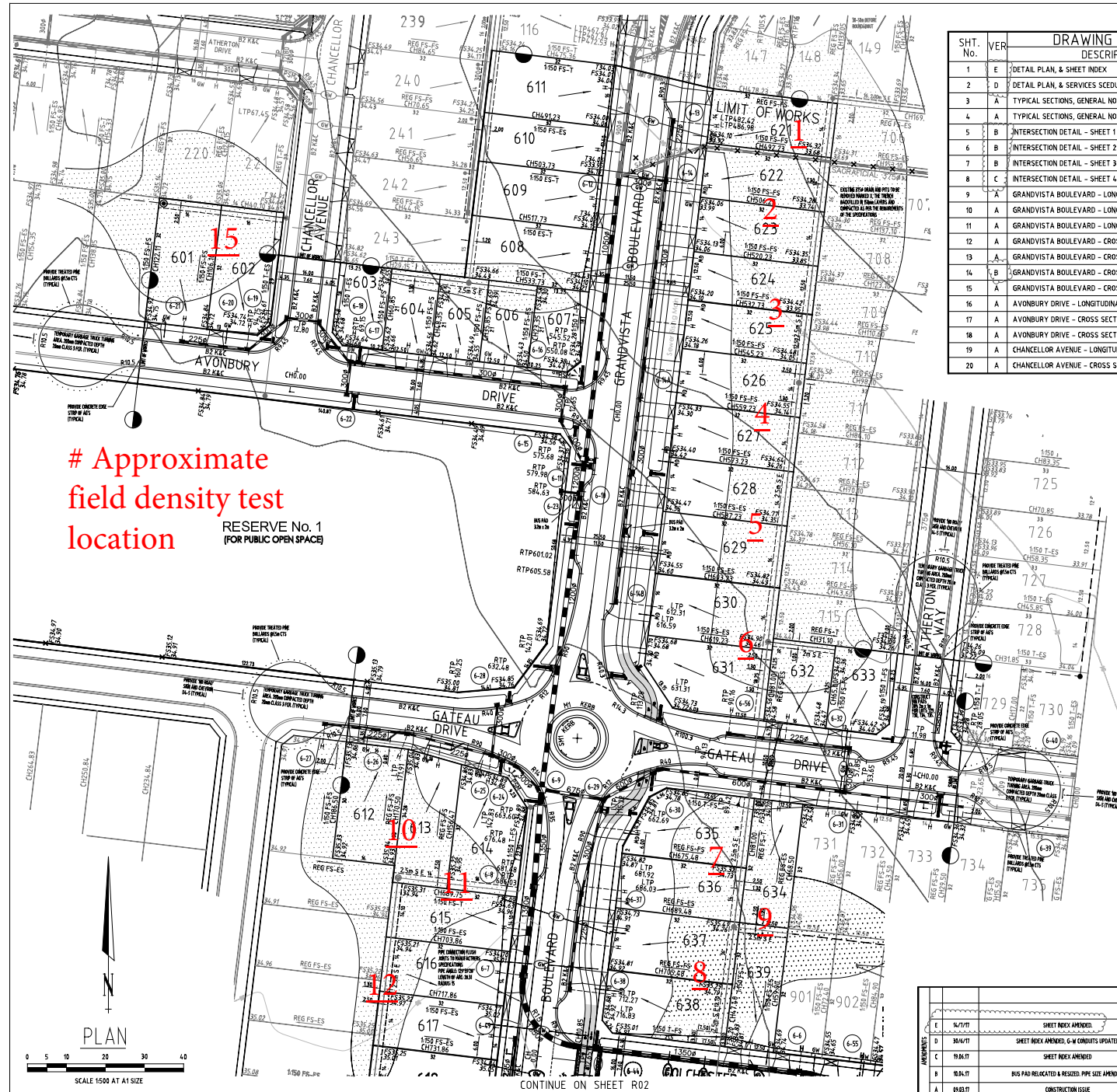
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to read 'Nick Brock', is written over a light blue circular stamp.

Nick Brock

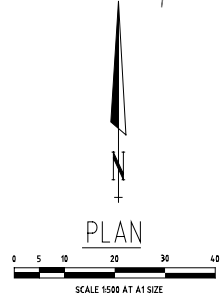
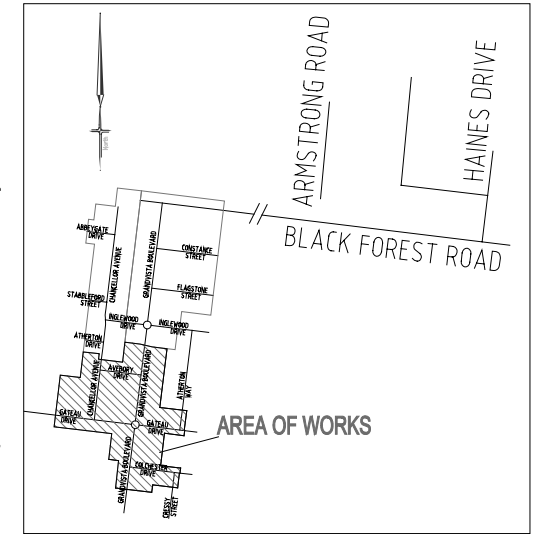
# FIGURE 1 (page 1 of 2)



# Approximate field density test location

RESERVE No. 1  
(FOR PUBLIC OPEN SPACE)

SHT. No.	VER.	DRAWING INDEX DESCRIPTION	SHT. No.	VER.	DRAWING INDEX DESCRIPTION
1	E	DETAIL PLAN, & SHEET INDEX	21	A	GATEAU DRIVE - LONGITUDINAL SECTION - SHEET 1 OF 2
2	D	DETAIL PLAN, & SERVICES SCHEDULE	22	A	GATEAU DRIVE - LONGITUDINAL SECTION - SHEET 2 OF 2
3	A	TYPICAL SECTIONS, GENERAL NOTES AND MISCELLANEOUS DETAILS - SHEET 1 OF 2	23	A	GATEAU DRIVE - CROSS SECTION - SHEET 1 OF 2
4	A	TYPICAL SECTIONS, GENERAL NOTES AND MISCELLANEOUS DETAILS - SHEET 2 OF 2	24	B	GATEAU DRIVE - CROSS SECTION - SHEET 2 OF 2
5	B	INTERSECTION DETAIL - SHEET 1 OF 4	25	A	ATHERTON WAY - LONGITUDINAL SECTION
6	B	INTERSECTION DETAIL - SHEET 2 OF 4	26	A	ATHERTON WAY - CROSS SECTION
7	B	INTERSECTION DETAIL - SHEET 3 OF 4	27	B	COLCHESTER DRIVE - LONGITUDINAL SECTION
8	C	INTERSECTION DETAIL - SHEET 4 OF 4	28	A	COLCHESTER DRIVE - CROSS SECTION - SHEET 1 OF 2
9	A	GRANDVISTA BOULEVARD - LONGITUDINAL SECTION - SHEET 1 OF 2	29	A	COLCHESTER DRIVE - CROSS SECTION - SHEET 2 OF 2
10	A	GRANDVISTA BOULEVARD - LONGITUDINAL SECTION - SHEET 2 OF 3	30	A	CRESSY STREET - LONGITUDINAL SECTION
11	A	GRANDVISTA BOULEVARD - LONGITUDINAL SECTION - SHEET 3 OF 3	31	A	CRESSY STREET - CROSS SECTION
12	A	GRANDVISTA BOULEVARD - CROSS SECTIONS - SHEET 1 OF 4	32	A	DRAINAGE LONGITUDINAL SECTIONS - SHEET 1 OF 6
13	A	GRANDVISTA BOULEVARD - CROSS SECTIONS - SHEET 2 OF 4	33	A	DRAINAGE LONGITUDINAL SECTIONS - SHEET 2 OF 6
14	B	GRANDVISTA BOULEVARD - CROSS SECTIONS - SHEET 3 OF 4	34	A	DRAINAGE LONGITUDINAL SECTIONS - SHEET 3 OF 6
15	A	GRANDVISTA BOULEVARD - CROSS SECTIONS - SHEET 4 OF 4	35	A	DRAINAGE LONGITUDINAL SECTIONS - SHEET 4 OF 6
16	A	AVONBURY DRIVE - LONGITUDINAL SECTION	36	A	DRAINAGE LONGITUDINAL SECTIONS - SHEET 5 OF 6
17	A	AVONBURY DRIVE - CROSS SECTION - SHEET 1 OF 2	37	A	DRAINAGE LONGITUDINAL SECTIONS - SHEET 6 OF 6
18	A	AVONBURY DRIVE - CROSS SECTION - SHEET 2 OF 2	38	A	PIT SCHEDULE SCHEDULE
19	A	CHANCELLOR AVENUE - LONGITUDINAL SECTION			
20	A	CHANCELLOR AVENUE - CROSS SECTION			



CONTINUE ON SHEET R02

COUNCIL REF. No. 75/110/084/06 E/06

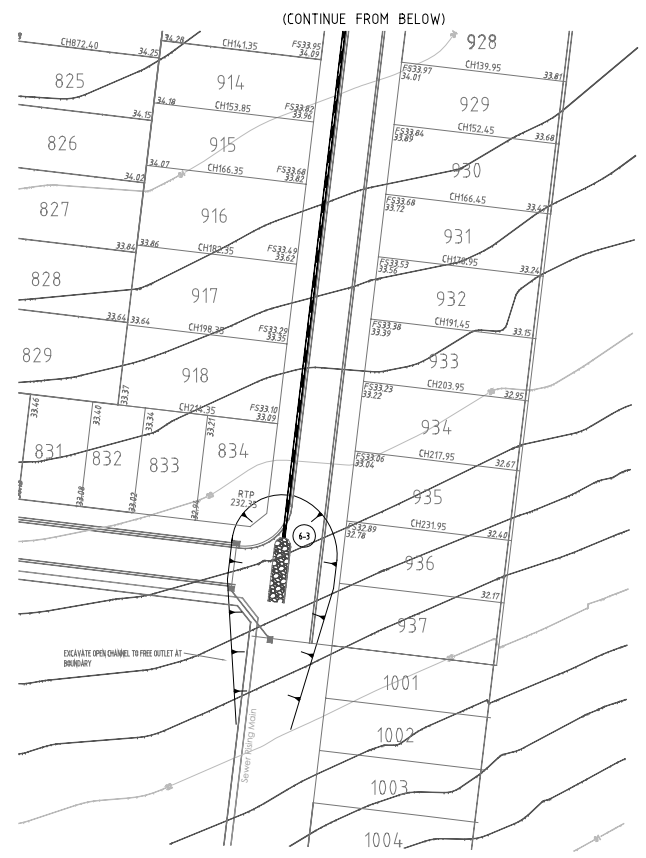
LEGEND		
W	WATER MAIN	EXISTING SURFACE LEVEL
E	ELECTRICITY CABLE	EXISTING PROPERTY INLET PIT
T	TELECOM CABLE	DRAWN AND PIT
W	WATER CONDUIT	EXISTING DRAIN AND PIT
100mm	100mm WATER CONDUIT	DESIGN TOP OF BATTERY LEVEL
S	SEWER LINE AND MANHOLE	DESIGN RIDGE LEVEL
K	KERB AND CHANNEL	EXISTING CONTOUR LINE @ LEVEL
T	TELECOM CONDUIT	EXISTING KERB AND CHANNEL
M	HOUSE DRAIN	TO BE REMOVED OFFSITE
P.S.M.	P.S.M. - STREET SKIN	CATCH DRAIN
EX. BATTERY	EX. BATTERY	PROP. BATTERY

**breese pitt dixon pty. ltd.**  
land surveyors civil engineers  
1/19 Cato Street  
Hawthorn East, 3123  
Telephone 8823 2300  
Fax no. 8823 2310

REV.	DATE	REMARKS	CHECKED	DATE
E	14/1/17	SHEET INDEX AMENDED.		
D	30/4/17	SHEET INDEX AMENDED.		
C	19/6/17	SHEET INDEX AMENDED.		
B	10/8/17	BUS PAD RELOCATED & RESIZED, PIPE SIZE AMENDED.		
A	03/03/17	CONSTRUCTION ISSUE		

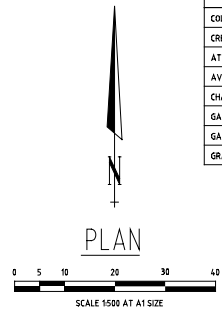
HELMWAY REF.	204 DT-F7	MUNICIPALITY	WYNDHAM
SURVEY	BPD	REFERENCE	8890 E/06
DESIGN	L.P.		
DRAWN	P.Z.		
CORNERSTONE ESTATE			
STAGE 6			
DETAIL LAYOUT PLAN			
SCALE AS SHOWN	DATE AHD	DATE	OCT '16
SHEET	1 OF 38		

# FIGURE 1 (page 2 of 2)



SERVICES OFFSETS & LOCATIONS

STREET NAME	ROAD RESERVE	WATER		GAS		ELECTRICITY		NBN	BACK OF KERB	JOINT TRENCHING
		DW	NDW	DW	NDW	CABLES	POLES			
COLCHESTER DRIVE	16.00	3.20 (N)	2.70 (N)	2.25 (N)	2.60 (S)	0.80 (BOK)	1.85 (S)	4.35(N) 4.05(S)	W/G & E.T	
CRESSY DRIVE	16.00	3.20 (W)	2.70 (W)	2.25 (W)	2.60 (E)	0.80 (BOK)	1.85 (E)	4.35(W) 4.05(E)	W/G & E.T	
ATHERTON WAY	16.00	3.20 (W)	2.70 (W)	2.25 (W)	2.60 (E)	0.80 (BOK)	1.85 (E)	4.35(W) 4.05(E)	W/G & E.T	
AVONBURY DRIVE	16.00	3.20 (N)	2.70 (N)	2.25 (N)	2.60 (S)	0.80 (BOK)	1.85 (S)	4.35(N) 4.05(S)	W/G & E.T	
CHANCELLOR AVENUE	16.00	3.20 (W)	2.70 (W)	2.25 (W)	2.60 (E)	0.80 (BOK)	1.85 (E)	4.35(W) 4.05(E)	W/G & E.T	
GATEAU STREET	20.00	3.20 (S)	2.70 (S)	2.25 (S)	2.60 (N)	0.80 (BOK)	1.85 (N)	4.35(S) 4.05(W)	W/G & E.T	
GATEAU STREET	16.00	3.20 (S)	2.70 (S)	2.25 (S)	2.60 (N)	0.80 (BOK)	1.85 (N)	4.35(S) 4.05(W)	W/G & E.T	
GRANDVISTA BOULEVARD	25.50	3.35 (E)	2.75 (E)	2.25 (E)	2.60 (W)	1.00 (BOK)	1.80 (W)	9.65(E) 6.35(W)	W/G & E.T	



COUNCIL REF. No. 75/110/084/06 E/06

LEGEND		20'w	EXISTING SURFACE LEVEL
W	WATER MAIN	PS27.85	FINISHED LEVEL (TITLE BOUNDARY)
G	GAS MAIN	721.85	DESIGN TOP OF BATTERY LEVEL
E	ELECTRICITY CABLE	927.60	DESIGN PAVEMENT LEVEL
T	TELECOM CABLE	821.85	DESIGN RIDGE LEVEL
W	WATER CONDUIT	821.85	EXISTING CONTOUR LINE & LEVEL
100mm	100mm WATER CONDUIT	821.85	FALLING IN EXCESS OF 150mm
G	GAS CONDUIT	821.85	EXISTING KERB AND CHANNEL
T	TELECOM CONDUIT	821.85	EXISTING KERB AND CHANNEL
H	HOUSE DRAIN	821.85	CATCH DRAIN
P.S.M.	P.S.M. PEU IN GROUND	821.85	EX. BATTERY
S	STREET SKIN	821.85	PROP. BATTERY

REV.	DATE	REMARKS	CHECKED	SCALE AS SHOWN	DATUM AHD	DATE OCT '16	SHEET 2 OF 38
D	14/07/17	TAPPING FOR LOT 618 RELOCATED	HELMAN REF. 204 DT-F7				
C	30/06/17	G/W CONDUIT LOCATIONS AMENDED	SURVEY	BPD			
B	19/06/17	SERVICES OFFSETS AMENDED	DESIGN	L.P.			
A	09/03/17	CONSTRUCTION ISSUE	DRAWN	P.Z.			
VER.							

breese pitt dixon pt. ltd.  
land surveyors civil engineers

CORNERSTONE ESTATE  
STAGE 6  
DETAIL LAYOUT PLAN

1/19 Cato Street  
Hawthorn East, 3123  
Telephone 8823 2300  
Fax no. 8823 2310

MUNICIPALITY  
WYNDHAM

REFERENCE  
8890 E/06



# COMPACTION ASSESSMENT

Job No 17529  
 Report No 17529/R001  
 Date Issued 03/10/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AG
Project	CORNERSTONE - STAGE 6	Date tested	25/09/17
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:57
---------	------------	-----------------	--------	-------------

### Test procedure AS 1289.2.1.1 & 5.8.1

Test No		1	2	3	4	5	6
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m <sup>3</sup>	1.87	1.89	1.92	1.86	1.94	1.84
Field moisture content	%	16.7	18.3	19.7	18.2	17.1	19.6

### Test procedure AS 1289.5.7.1

Test No		1	2	3	4	5	6
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	7	0	2	1
Peak Converted Wet Density	t/m <sup>3</sup>	1.85	1.95	1.91	1.93	1.98	1.87
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	1.93	-	2.01	1.88
Optimum Moisture Content	%	17.0	19.0	22.0	18.0	18.0	21.0

Moisture Variation From Optimum Moisture Content	0.5% dry	0.5% dry	2.5% dry	0.0%	1.0% dry	1.5% dry
--	----------	----------	----------	------	----------	----------

Density Ratio ( R <sub>HD</sub> )	%	101.0	97.0	99.5	96.5	96.5	98.0
-----------------------------------	---	-------	------	------	------	------	------

### Material description

No 1 - 6 Clay Fill
--------------------



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry





## COMPACTION ASSESSMENT

Job No 17529  
 Report No 17529/R002  
 Date Issued 04/10/2017

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AG
Project	CORNERSTONE - STAGE 6	Date tested	27/09/17
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:39
---------	------------	-----------------	--------	-------------

Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	10	11	12
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m<sup>3</sup></i>	1.91	1.90	1.86	1.93	1.90	1.88
Field moisture content %	23.7	22.8	22.7	31.3	24.5	19.9

Test procedure AS 1289.5.7.1

Test No	7	8	9	10	11	12
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material <i>wet</i>	9	3	0	5	0	0
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.85	1.89	1.91	1.91	1.90	1.93
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.89	1.90	-	1.93	-	-
Optimum Moisture Content %	26.5	25.0	24.5	33.0	26.5	20.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	1.5% dry	1.5% dry	2.0% dry	0.0%
--	----------	----------	----------	----------	----------	------

Density Ratio ( <i>R<sub>HD</sub></i> ) %	<b>101.0</b>	<b>99.5</b>	<b>97.5</b>	<b>99.5</b>	<b>100.0</b>	<b>97.5</b>
---	--------------	-------------	-------------	-------------	--------------	-------------

Material description

No 7 - 12 Clay Fill
---------------------



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

Job No 17529  
 Report No 17529/R003  
 Date Issued 02/10/2017

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AG
Project	CORNERSTONE - STAGE 6	Date tested	27/09/17
Location	WYNDHAM VALE	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	200 mm	Time: 13:45
----------------	------------	-----------------	--------	-------------

*Test procedure AS 1289.2.1.1 & 5.8.1*

Test No	13	14	15	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	-	-	-
Field wet density <i>t/m<sup>3</sup></i>	1.83	1.83	1.86	-	-	-
Field moisture content %	19.1	17.5	17.8	-	-	-

*Test procedure AS 1289.5.7.1*

Test No	13	14	15	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	-	-	-
Percent of oversize material <i>wet</i>	2	0	0	-	-	-
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.79	1.81	1.83	-	-	-
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.83	-	-	-	-	-
Optimum Moisture Content %	21.5	20.0	20.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	-	-	-
--	----------	----------	----------	---	---	---

<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>100.0</b>	<b>101.0</b>	<b>102.0</b>	<b>-</b>	<b>-</b>	<b>-</b>
---	----------	--------------	--------------	--------------	----------	----------	----------

*Material description*

No 13 - 15 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry